



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/573,667

11/20/2006

Marion Bartsch

4836-21/NP

4291

27572 7590 10/07/2008  
HARNESS, DICKEY & PIERCE, P.L.C.  
P.O. BOX 828  
BLOOMFIELD HILLS, MI 48303

EXAMINER

AUSTIN, AARON

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

10/07/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/573,667	<b>Applicant(s)</b> BARTSCH ET AL.	
	<b>Examiner</b> AARON S. AUSTIN	<b>Art Unit</b> 1794	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 March 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 8-10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/29/06</u>   | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 1794

## **DETAILED ACTION**

### ***Preliminary Amendments***

This office action addresses the set of claims submitted in the "PRELIMINARY AMENDMENT" received March 29, 2006. Claims 1-10 are pending in this application.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 1 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1794

Claim 1 provides for the use of a ceramic coating, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the relationship between the oxidic coating of claim 3 and the layers of the metallic component of claim 2. In particular, claim 3 requires that the coated metallic surface "already has an oxidic coating". It is unclear as to what this description means structurally. The metallic component of claim 2 is not described with any steps or timeline such that the term "already" has any true value. Does this refer to an additional coating applied prior to use, prior to deformation, or prior to application of the ceramic material?

### ***Claim Objections***

Claims 8-10 are objected to because of the following informalities: The claims are to a process but passively claim the steps rather than using active process language. Amendment to include active steps such as "providing a thin ceramic coating" will overcome this objection. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Rigney et al. (US 6,455,167).

Rigney et al. teach a turbine airfoil under thermal and mechanical stress with a protective coating to combat oxidation and corrosive attack. The invention includes a metallic component having a coating of alumina ceramic material provided over it (e.g., claim 1). The thickness of the alumina layer may be 10 microns (column 7, line 3).

Regarding claim 3, an oxidic coating in the form of a tightly adherent ceramic diffusion barrier layer is also in association with the metallic surface (e.g., claim 3).

Regarding claim 4, the coated metallic component includes a protective diffusion barrier layer which contain aluminum during the diffusion process and the alumina layer (e.g., claim 1).

Regarding claims 1, 2, 5, 7, and 8, the thickness of the alumina ceramic material may be 10 microns (column 7, line 3).

Regarding claim 6, the ceramic coating material consists of alumina.

Regarding claim 9, the ceramic coating may be produced by EB-PVD (column 7, line 41).

Regarding claim 10, the ceramic coating may be produced by CVD (column 7, line 40).

Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Ulion et al. (US 5,262,245).

Ulion et al. teach a superalloy component under thermal and mechanical stress including a metallic superalloy substrate component having a thermal barrier coating of alumina scale ceramic material provided over it as well as a ceramic coating (e.g., claim 1). Either of the alumina coating and the ceramic coating may serve as the claimed ceramic material. The thickness of the alumina scale layer may be 0.25 to 20 microns and of the ceramic coating may be 25 to 500 microns (e.g., claim 2).

Regarding claim 3, an oxidic coating in the form of the alumina layer is in association with the metallic surface in addition to the ceramic coating (e.g., claim 3).

Regarding claim 4, the alumina layer includes aluminum and serves as a protective coating (e.g., claim 1).

Regarding claims 1, 2, 5, 7, and 8, of the alumina scale layer may be 0.25 to 20 microns and of the ceramic coating may be 25 to 500 microns (e.g., claim 2).

Regarding claim 6, the alumina coating material consists of an oxidic ceramic material.

Regarding claim 9, the ceramic coatings may be produced by EB-PVD.

Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Lorimar et al. (US 5,192,610).

Art Unit: 1794

Lorimar et al. teach a corrosion resistant protective coating for an article under thermal and mechanical stress in the form of corrosion by process halogen gases and plasma. The invention includes an aluminum substrate component provided with a coating of alumina ceramic material provided over it (e.g., claim 1). The thickness of the alumina layer may be 0.1 to 20 microns (e.g., claim 2).

Regarding claim 3, the alumina layer serves as an oxidic coating in association with the metallic surface (e.g., claim 3).

Regarding claim 4, the alumina layer includes aluminum and serves as a protective coating (e.g., claim 1).

Regarding claims 1, 2, 5, 7, and 8, of the alumina layer may be 0.1 to 20 microns (e.g., claim 2).

Regarding claim 6, the alumina coating material consists of an oxidic ceramic material.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AARON S. AUSTIN whose telephone number is (571)272-8935. The examiner can normally be reached on Monday-Friday: 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1794

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John J. Zimmerman/  
Primary Examiner, Art Unit 1794

/Aaron Austin/